

VIII.—*Zoological Notes on perusing M. Du Chaillu's 'Adventures in Equatorial Africa.'* By Dr. J. E. GRAY, F.R.S., V.P.Z.S.

[Continued from vol. vii. p. 470.]

I HAVE been accused of carrying on a personal war—a “Gorilla war,” as it is called—against M. Du Chaillu. Nothing can be further from the truth: we have only met twice, and then our interviews were friendly. I have merely taken up the question from its bearing on the science and literature of the country. I have no other purpose than to forewarn zoologists and geographers that all the natural-history observations, and the whole of the little geographical knowledge M. Du Chaillu's ‘Travels’ present, seem to me to rest on a very doubtful basis; and I feel that I am the more called upon to do this since the few geographers who seem inclined to believe in his travels place their faith, not in his geographical observations, but in what they regard as his zoological discoveries, which I do not think afford the slightest evidence in favour of his ever having been more than a few miles from the coast; and I find that this is the opinion of several travellers (as Dr. Daniel, Mr. Fraser, and others) who have been in the same locality. They say that he may have made a few excursions up the river in the canoes of the natives, but certainly not to any distance inland.

I believe, and have thought so from the commencement, that M. Du Chaillu is as much sinned against as sinning; for I presume that when he lent his name and, perhaps, furnished a few notes to the American publisher, neither he nor the author of the work (for it is generally allowed that M. Du Chaillu did not write it) intended it as more than a cheap popular book of travels, written to meet the taste of the American public; and hence they paid little attention to the chronology of the pretended journey, or the accuracy of the facts, as all they intended was to get up an amusing work, with sufficient interesting matter to make it sell among a community who are always seeking excitement and telling wonderful tales, and whose newspapers are so full of “sensation paragraphs.” It is no fault of M. Du Chaillu that, to meet a supposed want of one or more of our scientific Societies, he was seized upon and put forth as a scientific traveller and zoologist—he it observed, before his book had seen the light, or his collections were unpacked; or that he, an “uneducated” collector of animal skins for sale, and an exhibitor of them in the Broadway, New York, was taken up and admitted as a visitor at one of our scientific and aristocratic clubs, and selected by the capricious world of fashion as the “lion of the season.”

Nor is he answerable for an English publisher thinking that the book would be a good speculation—that he might sell here for a guinea what was intended to be sold in the United States for a much smaller sum.

The only excuse that can be made for these proceedings is the ignorance and credulity of what have been called the most fastidious and best-educated classes of the public, who rushed in crowds to see his specimens, though badly preserved and as badly exhibited, and

to hear the wonderful tales he had to tell (and which he had already told the visitors to his show*); they seem to have swallowed all these tales as truth, and to have digested his book, illustrations and all, with equal facility, though it is full of contradictions and most evident exaggerations.

All these things are of little importance, except to make one regret that persons are not better instructed and more careful in what they give credit to and patronize. But they become important when the writer is put forward as an authority on subjects upon which I believe he is not qualified to speak; and it is only against the work being considered as what I conceive he himself never intended it to be when it was first compiled (that is, as a regular and veracious work of travels and natural history) that I have ever objected or desire to object.

I will now proceed to the regular zoological part of the work, which forms Appendix A., entitled "The Fauna of Equatorial Africa."

This list gives one an odd idea of M. Du Chaillu's zoological knowledge. It is divided under two heads, Mammals and Birds. The first, "Mammals," contains not only the Mammalia properly so called, but also "Turtles," "Serpents, and other Reptiles." We are there told, "*New species* I have, for convenience of reference, put by themselves: for details of the new animals the scientific reader is referred to the Proceedings of the Boston Society of Natural History for 1860." If the reader refers to them, he will find only the notices of sixteen Mammalia, and nothing respecting the Turtle, *Aspidonectes aspilus*, or the birds; for the birds are all described by Mr. Cassin, the Curator of the Museum of the Academy of Natural Sciences of Philadelphia, from specimens in that museum purchased of M. Du Chaillu, and are published in the Journal of that Academy. But, for some reason, neither Mr. Cassin's name, nor that of the Academy or its Journal, is mentioned in the 'Travels,' or even referred to in the preface or Appendix †.

On the Birds I will not make any observations, as only a very few authentically-named species have come under my hand, the typical specimens being in the museum of the Academy; and M. Du Chaillu appears to have brought only a very small proportion of the birds mentioned in the list to England ‡.

When I looked at the Mammalia, on the 13th of April, as carefully as I could under the then existing regulation that the specimens were not to be touched, and no visitor allowed to take notes or descriptions of them, I came to the conclusion that they were all old friends (even those named as new), and that they appeared to have

* See Berkeley, 'English Sportsman in the Western Prairies,' p. 417.

† See 'Saturday Review,' June 22, p. 634.

‡ M. Charles Bonaparte observes, "Nous profitons de cette occasion pour faire remarquer qu'en remettant simultanément en Europe et en Amérique les produits de ses chasses Africaines, M. du Chaillu a donné lieu à l'établissement de plusieurs espèces nominales; ainsi par exemple, *Barbatula Chaillui*? Cassin, ne diffère pas de *Barbatula formosa*, Verr., et a sur ce dernier la priorité tout aussi bien que *Barbatula fuliginosa*, Cassin, sur *Gymnobucco Bonapartii*."—*Comptes Rendus*, 1856.

been collected from the stations on the different parts of the west coast of Africa. A fuller examination has not altered my opinion. But one animal escaped me (or perhaps it was not exhibited when I was there); this is the one named *Cynogale velox*; for I now see that it is not the animal which I entered in my list as "*Lutra species*," and which is so named in the Appendix.

I have since had an opportunity of examining all the smaller species, and of comparing them with the specimens in the British Museum, and I subjoin the result of that examination, as challenged by M. Du Chaillu. I take the animals as they occur in the list of species discovered by M. F. B. Du Chaillu, in the Appendix, p. 471.

Troglodytes calvus,

Troglodytes kooloo kamba.—When I examined the skins of these two presumed new species, on the 13th of April, I was not able to discover any character by which they could be distinguished from the common *T. niger*. Dr. Selater and my assistant Mr. Gerrard have each examined the skulls and skeletons, and they inform me that they have come to the same conclusion; and I observe that Prof. Owen speaks of them as interesting varieties only. I suspect the baldness is merely an individual peculiarity. I need only refer to my observations on the figure of *T. calvus* in the last Number of this Journal, p. 467.

Tragelaphus alborivittatus.—This is evidently only a specimen of *Antilope euryceros* of Ogilby. It has unfortunately lost its hoofs, and the ears and tail are eaten. See observations in the last Number, p. 469.

Potamochoerus albifrons.—A mere variety of *P. penicillatus*. Specimens from the same locality differ in having the face black and white.

Genella Fieldiana.—This is *Genella pardina*, I. Geoffroy. M. Du Chaillu compares it with *G. poensis*, a distinct species.

Anomalurus Beldeni is only *Anomalurus Derbianus*, Gray (*A. Fraseri*, Waterhouse).

Anomalurus "not described yet" is *Anomalurus Beecrofti*, Fraser, Proc. Zool. Soc. 1853, p. 17, t. 32. It is the figure of this animal that is copied and given as the figure of the former presumed new species. The tail of the two specimens is short; but one is imperfect, and the other skinned, so as to make it look short.

Cercopithecus nigripes (a variety of *Cercopithecus Erxlebenii*, Dahlb. and Pucheran, Rev. Zool. 1856). M. Du Chaillu's specimen and the one we have in the British Museum have the sides blacker than in the figure above cited, which is said to be from a young specimen.

Otolicnus apicalis.—This appears to be *Galago crassicaudatus*; but the ears of the specimen are entirely destroyed by rats or cockroaches. The white end of the tail seems to be accidental.

Cynogale velox.—The specimen is in a bad state: only a skin—skinned from the mouth,—wanting one foot, and without any skull. M. Du Chaillu thinks that, as *Cynogale* is an Asiatic genus, the different shape and the proportions of the tail, and an African

habitat, are sufficient to constitute this the representative of a distinct genus, for which he proposes the name of *Potamogale*, preferring, however, "to wait until he can procure the skull and skeleton; therefore he places it in the genus *Cynogale*, to which it certainly bears a close resemblance." He further says, "the teeth resemble those of the above genus of Gray."

I may state that the animal does not appear to me to bear any relation to the genus *Cynogale*; and, from the form of the feet and tail, I suspect that it is a Glirine animal, and much more nearly allied to *Fiber*, *Hydromys*, or *Castor* than to any ferine genus. As M. Du Chaillu has not characterized his genus *Potamogale*, and has given such an erroneous description of the feet of the specimen that no one could recognize it, I do not think that his name has any claim to be retained, especially as it implies what appears to me to be a very doubtful affinity to the Musteline animal.

I therefore propose, as the feet differ essentially from any other genus that has come under my observation (though the peculiarity has escaped M. Du Chaillu and the naturalist that helped him in the preparation of his maiden zoological paper), and as I believe that it is necessary to form a genus for it, to call it *Mystomys*; and it may be thus characterized until the skull and teeth are discovered:—

Whiskers elongate, rigid. Feet small, rather slender; toes 5·5, compressed, elongate, not webbed, free, except the two middle toes of the hind feet, which are united together to the claws; claws compressed, curved. Tail short, stout, thick, compressed, covered with short adpressed hairs, except at the base and along the middle of the upper edge, where it is covered with close, soft, erect fur. The fur is soft, with flattened, elongated, striated hair, which is produced beyond the under-fur as in *Castor* and *Fiber*.

Mystomys velox = *Cynogale velox*, Du Chaillu.

M. Du Chaillu describes the feet and tail as follows; and this is a good specimen of his qualifications as a scientific zoologist:—"The extremities small, the first joint enclosed within the skin of the body (!); feet five-toed, plantigrade behind; soles bare; claws curved and sharp; fore claws (!) very slightly, if at all, webbed; hind claws (!) partially webbed, and the external border of the tarsus fringed with a membrane; tail stout, compressed laterally, and terminal three-fourths sharp above, and at the end below terminating in a point."

Sciurus Nordhoffii and *Sciurus eborivorus*.—These are only slight varieties of *Sciurus Stangeri* of Waterhouse; they both have the characteristic black streak behind the ear. I may observe that the Common Rat eats ivory.

Sciurus Wilsonii.—This appears to be *Sciurus mutabilis* of Peters; it is very nearly allied to *Sciurus Stangeri*, if indeed it be distinct from that species, only wanting the black streak above referred to; but Squirrels are exceedingly variable in colour, even when collected at the same time from the same locality.

Sciurus subalbidus is *Sciurus rufobrachium*, Waterhouse.

Sciurus rubripes is *Sciurus pyrrhopus*, F. Cuvier. M. Du Chaillu's specimens are brighter-bay on the head and legs than the specimen

described by Mr. Waterhouse ; but this is just the character of a more adult animal.

Sciurus minutus is *Sciurus palliatus*, Peters, 1852.

Manatus Owenii is only *Manatus senegalensis*. The skull is exactly like M. De Blainville's figure of the skull of that species in the French Museum.

The African species is known from the American one by having the malar bone produced below into a more or less broad rounded lobe, instead of being straight and without any such lobe, as is the case in the American skull. The lobe appears to increase in size as the animal increases in age.

It would thus appear that there is only one new animal out of the sixteen, and that is referred to a wrong genus, and so described that it could not be recognized.

A true naturalist—an accurate observer and recorder—may add much to our knowledge, without procuring any new species, if he bring information about the habits, manners, and localities of the animals he observes. Unfortunately, nothing can be more uninteresting and unsatisfactory than the information on this head in M. Du Chaillu's paper on "the new Mammalia," or in the '*Adventures,*' except as to the Gorilla ; and there the author has given his imagination full swing, and the specimens he brings contradict his statements. Thus, in his book the Gorilla is represented as advancing on its hind legs to meet its foes, and it is stated that it was always shot in the breast ; but the skins and skeletons show that they were shot in the back or the neck, as the animal was retreating on all-fours, or else in the trees,—which is more consistent with our knowledge of its habits, as those who have seen them alive inform me that they never willingly leave the trees ; and I am sorry to say that the observations on the other animals appear to me equally apocryphal. The habitat given in the essay as of a most general kind, such as the head-waters of such or such a river, and the habitat given in the description of the beast or bird, is often not consistent with that given in the '*Adventures.*' Thus, we are told that *Barbatula Duchailu* is found on the Moonda River ; and in the '*Adventures*' it is said to be found in *Ikoï* Creek, which is on the Gaboon.

The number of animals collected by M. Du Chaillu, as given in his list, is very small compared with those collected by Messrs. Rendell, Whitfield, Thompson, Stanger, and Fraser, at different stations on the west coast of Africa. Each of these naturalists brought sundry new species of Mammalia, as well as many new birds, from a much more limited district than M. Du Chaillu professes to have examined ; and some of them were only amateur collectors : Mr. Rendell sent skins of birds in such abundance as to render them quite a drug in the market for years.

M. Du Chaillu is not a good preserver of skins. As soon as the skin was taken off the larger animals, even the Gorillas, it was stuffed, as full as it could hold, with straw, dried leaves, and other substances, and then sewn up : the outer surface dried, but there being no means by which the internal moisture could escape, many of the skins have

rotted internally, are as tender as blotting-paper, and will scarcely bear damping without the hair and epidermis peeling off. Skins so stuffed are very liable to injury in carriage from place to place. It is this style of stuffing that makes me feel certain they could not have been prepared far inland; for no one would have adopted such an inconvenient and dangerous practice if the skins had to be carried for many miles on the backs of men; and even near the coast it would have been better if the skins had been spread out flat and allowed to dry on both sides, and then had been packed in a small space, as is usual with good collectors. The plan adopted, and the want of sufficient attention afterwards, render his specimens of the larger Mammalia of little value for a museum. Thus the beautiful Antelope (*Tragelaphus euryceros*) has no hoofs, and only remnants of ears and tail. The Buffalo skins want hoofs and tail, and one has no horns; and many of the other skins are equally imperfect, and cannot be stuffed.

The smaller specimens of the Mammalia are in a better state; but many of these, from constant handling and want of care, are without one or more limbs, &c. And I may observe that the *Galago*, smaller monkeys, and some of the squirrels are preserved just as they are usually sent from the native collector, with a stick up their tail, and not as if they had been preserved by a collector who had received instructions in taxidermy from M. Verreaux at Paris.

PROCEEDINGS OF LEARNED SOCIETIES.

ROYAL SOCIETY.

March 21, 1861.—Major-General Sabine, Treasurer and Vice-President, in the Chair.

“On the Structure and Growth of the Tooth of *Echinus*,” by S. James A. Salter, M.B. Lond., F.L.S., F.G.S.

The author commences his paper by stating that the researches upon which it is based were made more than four years since, and then without the knowledge that the structure had been previously investigated by others.

An abstract of the *literature* of the subject (contained in very narrow limits) is then given.

In 1841 Valentin, in Agassiz's Monograph on the Echinoderms (*Anatomie des Echinodermes*), published a description and many good figures of the minute anatomy and growth of the Echinus-tooth.

Professor Quekett, in his ‘Lectures on Histology’ (1854), referring to the minute *mature* anatomy of the organ, states its ultimate structure to resemble bone and dentine of vertebrata.

Dr. Carpenter, in his work ‘On the Microscope,’ speaks of the tissue of the tooth as essentially of the same nature as the shell of the Echinidæ generally (1856).

Lastly, Professor W.C. Williamson describes the subject more fully
Ann. & Mag. N. Hist. Ser. 3. Vol. viii.